

MATRIX CHARACTERISTICS AFFECTING TREATMENT COST OR PERFORMANCE (2)

Table 2 lists selected characteristics of untreated soil from Burning Ground No. 3.

Table 2. Matrix Characteristics

Soil Classification	Information not available
Clay Content and/or Particle Size Distribution	0.032 mm (mean particle size)* 31.5% clay, 30.9% silt, 35.3% sand, 2.3% gravel*
Moisture Content	17.5 %*
Oil & Grease or Total Petroleum Hydrocarbons	Information not available
Bulk Soil Density (3)	1.6 tons/cy

* Average value from the Proof of Performance Test (2).

TREATMENT SYSTEM DESCRIPTION**PRIMARY TREATMENT TECHNOLOGY (5)**

Soil Ex-Situ – Low Temperature Thermal Desorption

SUPPLEMENTARY TREATMENT TECHNOLOGIES (5)

Pretreatment (Solids) – **Screening**
 Post-Treatment (Solids) – **Quench**
 Post-Treatment (Air) – **Baghouse**
 Post-Treatment (Air) – **Catalytic Oxidation**
 Post-Treatment (Air) – **Quench**
 Post-Treatment (Air) – **Scrubber**

TIMELINE (1,2,3,10)

Date	Activity
August 30, 1990	LHAAP installation added to the NPL
December 30, 1991	CERCLA Section 120 Agreement (Federal Facility Agreement) between LHAAP, U.S. EPA and TNRC became effective
December 1993	Treatability study performed
September 8, 1994	Proposed Plan for the Early Interim Remedial Action released by USACE and U.S. EPA
September 15, 1994	Public meeting held to present the Proposed Plan and solicit comments
February 23, 1995	TNRC concurs with U.S. EPA's recommendation of using LTTD for soil treatment
May 12, 1995	Interim ROD signed by U.S. EPA Region VI Administrator.
November 1996	Notice to Proceed issued to Radian for Burning Ground No. 3 soil remediation delivery order

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Date	Activity
January 13 – February 12, 1997	Mobilization and set-up of soil treatment units
February 1997	Soil treatment plant setup complete; start up and shake-down
February 13-15, 1997	Proof of Performance Test
February 18 - December 10, 1997	Soil/source material excavation and full-scale operation of treatment system
December 11, 1997	Soil remediation completed; treatment system shut down
January 19 – 23, 1998	Demobilize catalytic oxidation unit
January 26 – 30, 1998	Demobilize thermal units
December 8, 1997 – January 9, 1998	Dismantle and demobilize tent structures
January 26 – March 27, 1998	Remove soil staging pad
November 24, 1997 - June 9, 1998	Site restoration

TREATMENT SYSTEM SCHEMATIC AND TECHNOLOGY DESCRIPTION AND OPERATION

Figure 4 shows a process flow diagram for the mobile LTTD system used to treat ex-situ soil at Burning Ground No. 3.

Initial Activities (4)

Initial activities included:

- Construction of a soil handling and dewatering pad;
- Construction of a treated soil staging area;
- Mobilization and setup; and
- Conducting a Proof of Performance test.

Soil Treatment Plant Description and System Operation (4,5)

The soil treatment plant (STP) was designed as a stand alone, mobile processing unit for treating solid materials contaminated with chlorinated and non-chlorinated hydrocarbons. The STP utilized a non-contact, counter-current, low-temperature, thermal desorption process which volatilized target organic contaminants from the soil into the air within the system. The airborne contaminants were then catalytically oxidized in a specially designed low-temperature, catalytic oxidation system designed to destroy chlorinated organics.

Pretreatment

- Contaminated soil was excavated from previously designated areas and staged at the soil handling and dewatering pad.
- All contaminated feed material passed through a vibrating screen that removed debris greater than 3 inches in diameter from the STP feed stream. Removed debris was steam cleaned in batches and transported to the treated soils pad for backfilling with treated soils.



